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CENTRAL INTELLIGENCE AGENCY

## INFORMATION REPORT

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25X1A

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COUNTRY

Italy

DATE DISTR. 2 June, 1948

SUBJECT

Process for Solidifying Gasoline

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## Solid Gasoline, "Petrolit"

Gasoline treated with the Petrolit process has a semisolid consistency, comparable to that of quince marmalade, is pale yellow and has a density of approximately 0.750 to 0.800. Treated Kerosene has similar characteristics, with slightly lighter color, and density from 0.800 to 0.850. Light naphthas furnish a product of darker color, with density lying between 0.900 and 0.950.

The Petrolit process bestows fuels with the following properties:

- 1) It reduces the vapor pressure of the more volatile fuels, thus eliminating all danger of forming explosive mixtures with air, even when tanks are insufficiently aerated.
- 2) It reduces the inflammability of fuels to the level of wood, with respect to ignition temperature and progress of combustion. In the event of a fire, solidified fuels can be put out with the usual extinguishing methods, especially with water.
- 3) Solidified fuel which is salvaged after a fire is extinguished can be utilized as before.
- 4) Rapid combustion and spreading of the fire from one storage to another are avoided.
- 5) Vapor pressure is reduced to a low value, so strong and heavy metal containers are no longer needed. Impregnated cloth or paper bags can be used, and stored in hot climates.
- 6) Solidified fuel can be readily converted back to liquid fuel, with no alteration of the properties of the fuel.
- 7) If left in open air, the solid fuel evaporates slowly

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This document is hereby regraded to CONFIDENTIAL in accordance with the letter of 13 October 1973 from the Director of Central Intelligence to the Secretary of the United States.

Next Review Date: 2008

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(about 3% per day) until a thin layer of solid substance forms on the surface, after which evaporation decreases to a very low value.

8) Since it is preserved in water, it can be stored safely anywhere.

An exclusively mechanical method is adopted to reconvert to the liquid state. The time needed to reconvert a given volume of solidified fuel is dependent on the power of the reconvorting mechanism. The amount of fuel remaining in the solid residue after reconversion is about 2%. However, in high-powered installations working with larger amounts of solid residue, much more of the fuel can be recovered.

The cost of materials to solidify a ton of gasoline in Italy at this time is about 6,000 Lire. When solidified, weight increases to 5 or 6% above liquid's weight and volume increases 7 to 8%. In a comparative test with two samples of Shell gasoline, the recovered sample showed a slight decrease in volatility, an increase in gums from .001% to .0025%, no sediment, and no loss in octane rating; when compared with the control sample.

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